

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently Amended) High-power press pack semiconductor module, comprising:

- an electrically conducting base plate;
- at least one electrically conducting top plate;
- a contact piston in pressing contact with the top plate;

- at least one semiconductor chip including semiconductor material, a first main electrode that makes contact with the base plate forming a ~~plane~~ an interface and a second main electrode that makes contact with the top plate,

- a first module power connection in pressing contact with the base plate; and
- a second module power connection in pressing contact with the contact

piston;

~~a housing containing the base plate, top plate and semiconductor chip,~~

wherein a material is provided adjacent at least one of said first or second main electrodes that, together with the semiconductor material forms a eutectic alloy or an alloy whose melting point is below that of the semiconductor material, and

wherein at least one of said base plate or top plate is made of metal matrix composite material comprising two-dimensional randomly distributed short cut graphite fibers in the ~~plane of the~~ interface in an Al or Ag matrix, whose coefficient of thermal expansion is close to that of the semiconductor material, said metal matrix composite material containing said alloy-forming material.

2. (Original) Module as claimed in claim 1, wherein:

- said base plate and top plate are made of the same metal matrix composite material.

3. (Original) Module as claimed in claim 1, wherein:

- said metal matrix composite material has a metal content of at least 25 percent by volume.

4. (Original) Module as claimed in claim 3, wherein:

- said metal matrix composite material comprises a metallic matrix alloy with a semiconductor material.

5. (Currently Amended) High-power press pack semiconductor module comprising:

- an electrically conducting base plate;  
- at least one electrically conducting top plate;  
- at least one semiconductor chip including semiconductor material, a first main electrode that makes contact with the base plate forming a plane an interface and a second main electrode that makes contact with the top plate,  
- a contact piston in pressing contact with the top plate;  
- a first module power connection in pressing contact with the base plate; and  
- a second module power connection in pressing contact with the contact piston;

~~—a housing containing the base plate, top plate and semiconductor chip,~~  
wherein a material is provided adjacent at least one of said first or second main electrodes that, together with the semiconductor material forms a eutectic alloy or an alloy whose melting point is below that of the semiconductor material, and wherein

- at least one of said base plate or top plate is made of metal matrix composite material comprising of two-dimensional randomly distributed short cut graphite fibers in the ~~plane of the~~ interface in an Al or Ag matrix, whose coefficient of thermal expansion is close to that of the semiconductor material, said metal matrix composite material containing said alloy-forming material,

- said metal matrix composite material having a metal content of at least 25 percent by volume,

- said metal matrix composite material comprising a metallic matrix alloy with a semiconductor material, and

- said metallic matrix alloy having a semiconductor material content up to the semiconductor material content of a eutectic composition.

6. (Currently Amended) Module as claimed in claim 5, wherein:

- said matrix comprises ~~Ag, Al,~~ Au or Cu with a Si content of at most 13 percent.

7. (Original) Module as claimed in claim 4, wherein:

- said metallic matrix alloy has a semiconductor material content that is tailored depending on the thickness of the semiconductor material such that the hotspot alloy is in the eutectic range without bulk precipitation.

8. (Original) Module as claimed in claim 1, wherein:

- said at least one plate of a metal matrix composite material has a thickness of at least the thickness of the semiconductor material.

9. (Original) Module as claimed in claim 1, wherein:

- said base plate and said top plate are both made of metal matrix composite material, and

- said plates have a combined thickness of at least the thickness of the semiconductor material.